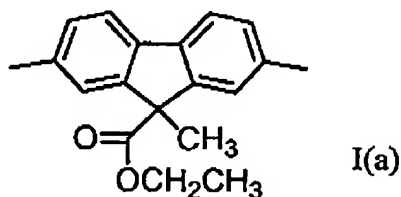
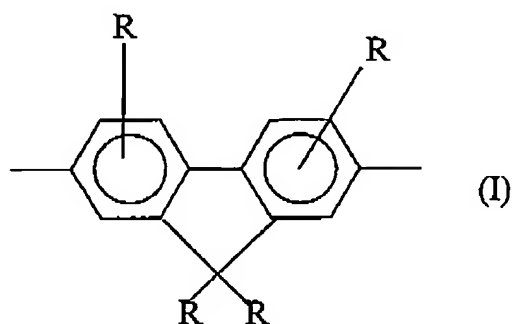


Application No.: 10/809,657  
Docket No.: PE0667 US DIV3

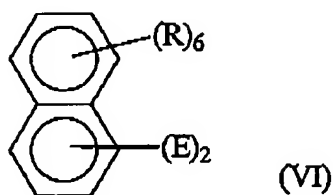
Page 2

**Listing of Claims**

1. (Currently amended) A copolymer comprising at least one first monomeric unit and at least one second monomeric unit, wherein the at least one first monomeric unit has a Formula I and I(a)



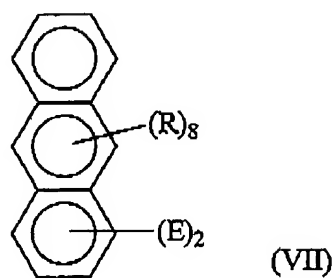
and the at least one second monomeric unit is selected from fused ring aromatic groups having Formula VI,



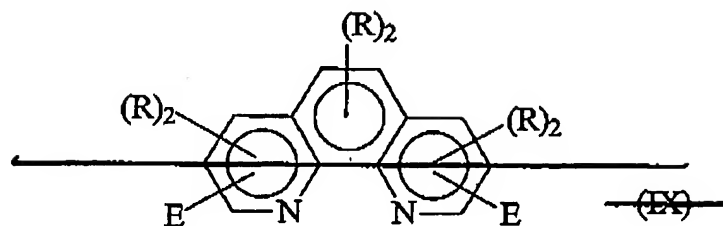
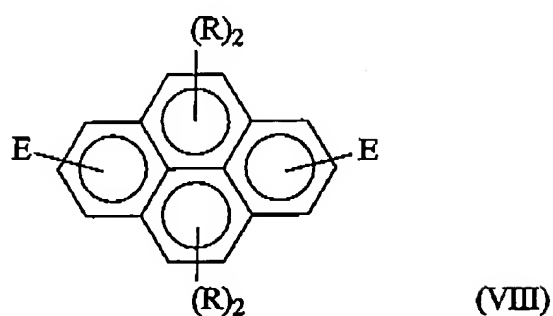
Application No.: 10/809,657  
Docket No.: PE0667 US DIV3

Page 3

Formula VII,

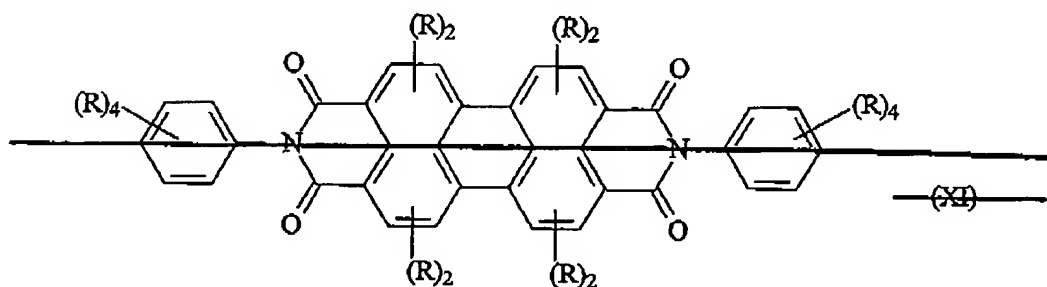
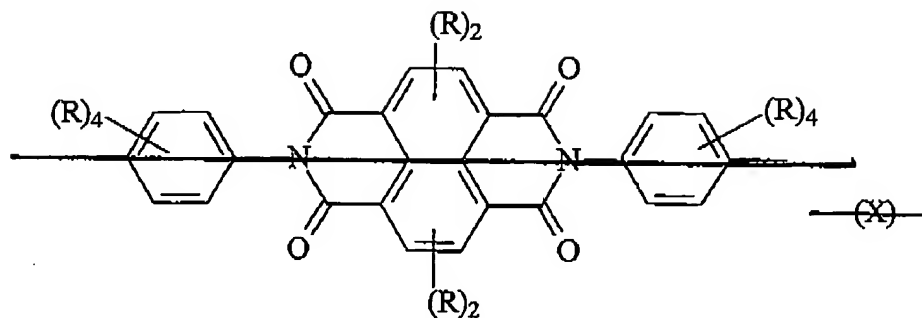


and Formula VIII



Application No.: 10/809,657  
 Docket No.: PE0667 US DIV3

Page 4



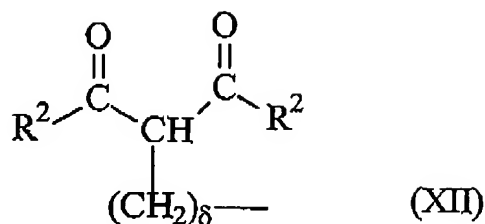
where:

in each of Formulae I, I(a), VI, VII, and VIII:

R is a substituent on a carbon atom which can be the same or different at each occurrence and is selected from hydrogen, alkyl, aryl, heteroalkyl, heteroaryl, F, -CN, -OR<sup>1</sup>, -CO<sub>2</sub>R<sup>1</sup>, -C<sub>ψ</sub>H<sub>q</sub>F<sub>λ</sub>, -OC<sub>ψ</sub>H<sub>q</sub>F<sub>λ</sub>, -SR<sup>1</sup>, -N(R<sup>1</sup>)<sub>2</sub>, -P(R<sup>1</sup>)<sub>2</sub>, -SOR<sup>1</sup>, -SO<sub>2</sub>R<sup>1</sup>, -NO<sub>2</sub>, and beta-dicarbonyls having Formula XII

Application No.: 10/809,657  
 Docket No.: PE0667 US DIV3

Page 5



and as further described below under "Formula XII", or wherein

R<sup>2</sup> is selected from hydrogen, alkyl, aryl, heteroalkyl and heteroaryl;

δ is 0 or an integer from 1 to 12, adjacent R groups together can form a 5- or 6-membered cycloalkyl, aryl, or heteroaryl ring,

such that:

R<sup>1</sup> is a substituent on a heteroatom which can be the same or different at each occurrence and is selected from alkyl, aryl, heteroalkyl and heteroaryl; and

ψ is an integer between 1 and 20, and θ and λ are integers satisfying Equation A1 below:

$$\theta + \lambda = 2\psi + 1; \quad (\text{Equation A1});$$

in each of Formulae VI, VII, and VIII:

E can be the same or different at each occurrence and is a single bond or a linking group selected from arylene and heteroarylene;

in Formula VI[:];

the two E's are in the 1,4-, 1,5-, 1,8-, 2,3-, or 2,6- positions;

in Formula VII[:];

the two E's are in the 1,4-, 1,5-, 1,8-, 2,3-, 2,6-, or 9,10- positions;

in Formula VIII[:];

a first E is in the 1, 2, or 3 position, a second E is in the 6, 7, or 8 position;

and

~~in Formula XII:~~

~~R<sup>2</sup> is selected from hydrogen, alkyl, aryl, heteroalkyl and heteroaryl;~~

~~δ is 0 or an integer from 1 to 12, and with the proviso that when R in formulae VI, VII,~~

~~and VIII is hydrogen, alkyl, F, -CN, -OR<sup>1</sup>, or CO<sub>2</sub>R<sup>1</sup> the copolymer further~~

~~comprises end-capping groups that are aromatic[:];~~

and with the further proviso that said copolymer does not consist of 9,9-di-n-octylfluorene and unsubstituted naphthalene alternating copolymer.

Application No.: 10/809,657  
Docket No.: PE0667 US DIV3

Page 6

2. (Original) The copolymer of Claim 1, wherein R groups in one or more of the at least one first monomeric unit are independently selected from alkyl groups having 1 to 30 carbon atoms; heteroalkyl groups having 1-30 carbon atoms and one or more heteroatoms of S, N, or O; aryl groups having from 6 to 20 carbon atoms, and heteroaryl groups having from 2 to 20 carbon atoms and one or more heteroatoms of S, N, or O.

3. (Original) The copolymer of Claim 1 that excludes any vinylene monomeric units.

4. (Previously Presented) The copolymer of Claim 1 wherein each R group in each of Formula I, Formula 1(a), Formula VI, Formula VII, and Formula VIII is selected from:

hydrogen;

alkyl;

aryl;

heteroalkyl;

heteroaryl;

F;

-CN;

-P(R<sup>1</sup>)<sub>2</sub> and -SOR<sup>1</sup>, where R<sup>1</sup> is a substituent on a heteroatom which can be the same or different at each occurrence and is selected from alkyl, aryl, heteroalkyl and heteroaryl;

-NO<sub>2</sub>;

a beta-dicarbonyl having Formula XII;

-C<sub>ψ</sub>H<sub>θ</sub>F<sub>λ</sub>;

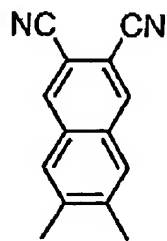
-OC<sub>ψ</sub>H<sub>θ</sub>F<sub>λ</sub>;

-OR<sup>1</sup>, -CO<sub>2</sub>R<sup>1</sup>, -SR<sup>1</sup>, -N(R<sup>1</sup>)<sub>2</sub>, and -SO<sub>2</sub>R<sup>1</sup> where R<sup>1</sup> is a straight chain or branched alkyl of more than 20 carbons or a straight chain or branched heteroalkyl.

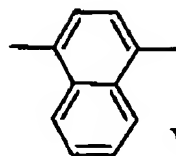
5. (Original) The copolymer of Claim 1 wherein the at least one of the R groups in one or more of the at least one first monomeric unit is independently selected from linear and branched n-butyl groups; linear and branched iso-butyl groups; linear and branched pentyl groups; hexyl groups, and octyl groups with and without olefinic unsaturation; phenyl groups, thiophene groups, carbazole groups, alkoxy groups, phenoxy groups and cyano groups.

6. (Original) The copolymer of Claim 1 wherein at least one of the R groups in one or more of the at least one first monomeric unit are independently selected from H, C<sub>6</sub>-C<sub>12</sub> alkoxy, phenoxy, C<sub>6</sub>-C<sub>12</sub> alkyl, phenyl and cyano.

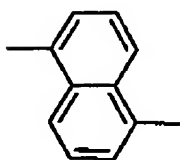
7. (Previously Presented) The copolymer of Claim 1 wherein one or more of the at least one second monomeric unit is selected from Formulae VI(a) through VI(d), and VII(a)



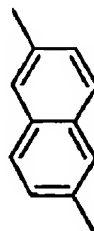
VI(a)



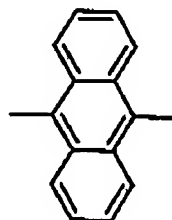
VI(b)



VI(c)



VI(d)



VII(a)

8. (Cancelled).

9. (Previously Presented) The copolymer of Claim 1, wherein one or more of the at least one second monomeric unit has Formula VI, VII and VIII: wherein R is selected from:  
partially or fully fluorinated alkyl groups having from 1 to 12 carbon atoms;  
alkoxy groups having from 1 to 12 carbon atoms;  
esters having from 3 to 15 carbon atoms;

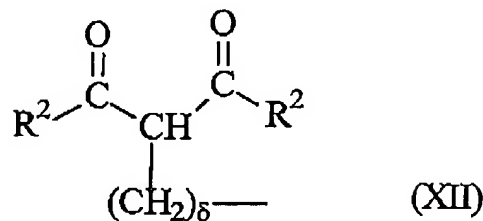
Application No.: 10/809,657  
 Docket No.: PE0667 US DIV3

Page 8

-SR<sup>1</sup>, -N(R<sup>1</sup>)<sub>2</sub>, -P(R<sup>1</sup>)<sub>2</sub>, -SOR<sup>1</sup>, -SO<sub>2</sub>R<sup>1</sup>, where R<sup>1</sup> is an alkyl group having from 1 to 12 carbon atoms;

-NO<sub>2</sub>; and

beta-dicarbonyls having Formula XII



where:

in Formula XII:

R<sup>2</sup> is an alkyl group having from 1 to 12 carbon atoms and  $\delta$  is 0, 1, or 2.

10-12. (Cancelled).

13. (Currently Amended) The copolymer of Claim 1, wherein one or more of the at least one second monomeric unit has one of Formulae VI through VIII wherein:

R groups are preferably H, C<sub>6</sub>-C<sub>12</sub> alkyl groups, C<sub>6</sub>-C<sub>20</sub> aryl groups, and C<sub>2</sub>-C<sub>20</sub> heteroaryl groups; and

in Formula VI:

the E's are in the 1,4-, 1,5-, 1,8-, 2,3-, or 2,6- positions;

in Formula VII:

the E's are in the 1,4-, 1,5-, 1,8-, 2,3-, 2,6-, or 9,10- positions.

14. (Original) An electronic device comprising at least one electroactive layer comprising the copolymer of Claim 1.

15. (Original) The device of Claim 14, wherein the device comprises a hole injection/transport layer comprising the copolymer of Claim 1.

Application No.: 10/809,657  
Docket No.: PE0667 US DIV3

Page 9

16. (Original) The device of Claim 14, wherein the device comprises an electron injection/transport layer comprising the copolymer of Claim 1.

17. (Original) The device of Claim 14, wherein the electroactive layer comprises a light-emitting material comprising the copolymer of Claim 1.

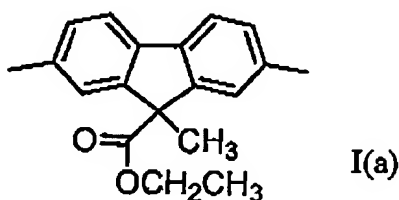
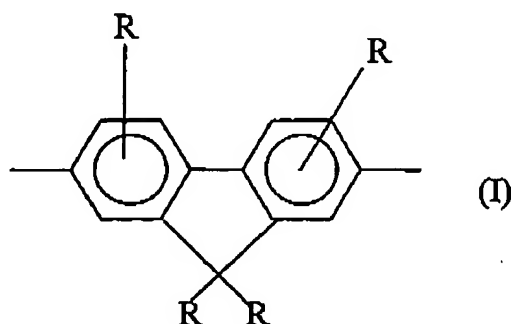
18. (Cancelled).

19. (Original) The device of Claim 14, wherein the device is selected from a light-emitting device, a photodetector, and a photovoltaic device.

20. (Original) The device of Claim 14, wherein the device is an electroluminescent display.

21. (Currently Amended) A light-emitting device comprising at least one light-emitting layer comprising the copolymer of formula

at least one first monomeric unit and at least one second monomeric unit, wherein the at least one first monomeric unit has a Formula I and I(a)

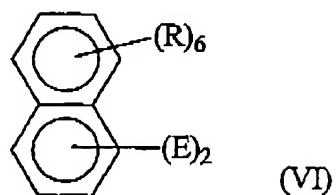


and the at least one second monomeric unit is selected from fused ring aromatic groups having Formula VI,

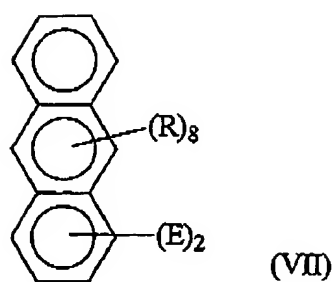


Application No.: 10/809,657  
Docket No.: PE0667 US DIV3

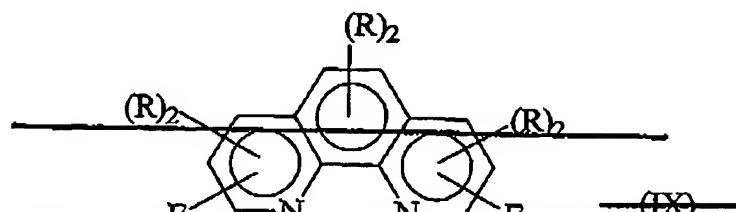
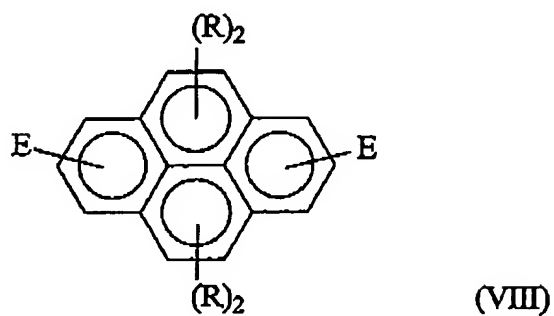
Page 10



Formula VII.

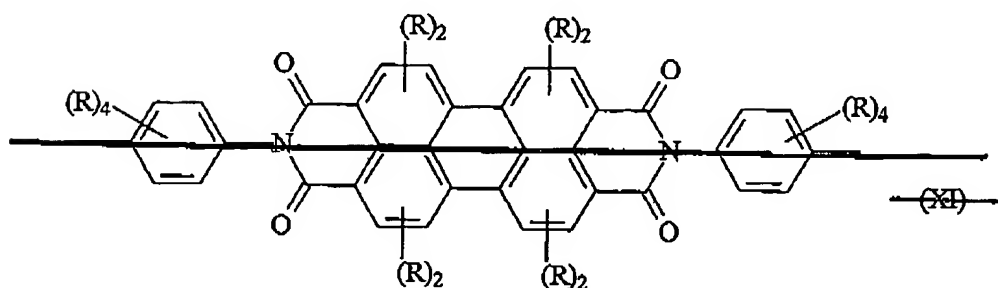
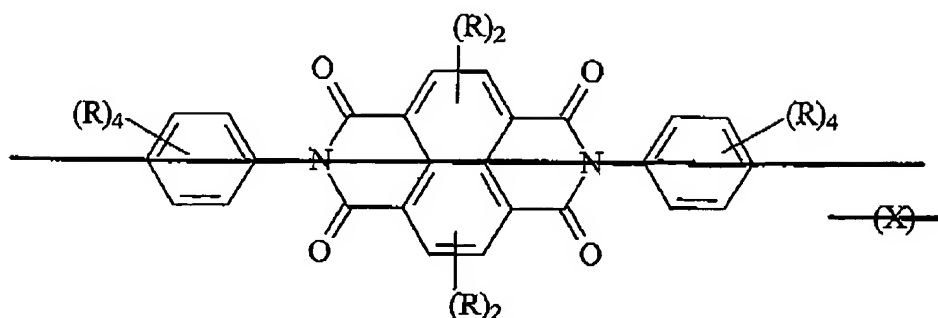


and Formula VIII through Formula XI,



Application No.: 10/809,657  
 Docket No.: PE0667 US DIV3

Page 11



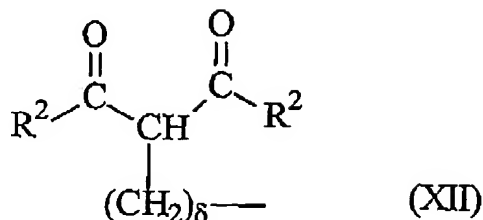
where:

in each of Formulae I, I(a), VI, VII, VIII through XI:

R is a substituent on a carbon atom which can be the same or different at each occurrence and is selected from hydrogen, alkyl, aryl, heteroalkyl, heteroaryl, F, -CN, -OR<sup>1</sup>, -CO<sub>2</sub>R<sup>1</sup>, -C<sub>ψ</sub>H<sub>θ</sub>F<sub>λ</sub>, -OC<sub>ψ</sub>H<sub>θ</sub>F<sub>λ</sub>, -SR<sup>1</sup>, -N(R<sup>1</sup>)<sub>2</sub>, -P(R<sup>1</sup>)<sub>2</sub>, -SOR<sup>1</sup>, -SO<sub>2</sub>R<sup>1</sup>, -NO<sub>2</sub>, and beta-dicarbonyls having Formula XII

Application No.: 10/809,657  
 Docket No.: PE0667 US DIV3

Page 12



~~and as further described below under "Formula XII"; or wherein~~  
R<sup>2</sup> is selected from hydrogen, alkyl, aryl, heteroalkyl and heteroaryl;  
δ is 0 or an integer from 1 to 12 and adjacent R groups together can form a 5- or 6-  
membered cycloalkyl, aryl, or heteroaryl ring,  
 such that:  
 R<sup>1</sup> is a substituent on a heteroatom which can be the same or different at each  
 occurrence and is selected from alkyl, aryl, heteroalkyl and heteroaryl; and  
 ψ is an integer between 1 and 20, and θ and λ are integers satisfying Equation A1  
 below:

$$\theta + \lambda = 2\psi + 1; \quad (\text{Equation A1});$$

in each of Formulae VI, VII, VIII, and IX:

E can be the same or different at each occurrence and is a single bond or a linking  
 group selected from arylene and heteroarylene;

in Formula VI:

the two E's are in the 1,4-, 1,5-, 1,8-, 2,3-, or 2,6- positions;

in Formula VII[:];

the two E's are in the 1,4-, 1,5-, 1,8-, 2,3-, 2,6-, or 9,10- positions;

in Formula VIII[:];

a first E is in the 1, 2, or 3 position, a second E is in the 6, 7, or 8 position;

in Formula IX[:]; and

a first E is in the 2, 3, or 4 position; a second E is in the 7, 8, or 9 position; and

in Formula XII[:];

~~R<sup>2</sup> is selected from hydrogen, alkyl, aryl, heteroalkyl and heteroaryl;~~

~~δ is 0 or an integer from 1 to 12.~~

with the proviso that said copolymer does not consist of 9,9-di-n-octylfluorene and  
unsubstituted naphthalene alternating copolymer.